

INFORMATION

Measures of Health Personnel in California

*A Report of the Bureau of Research and Planning,
California Medical Association*

California ranks well above average in most measures of health personnel to population, being near the top in the all-important physician/population ratio. The State also ranks high in relative numbers of nurses and of dentists.

Within the State, ratios of health personnel to population generally correlate with population density. The greater metropolitan areas (Los Angeles, San Francisco, and San Diego Metropolitan Areas) show the highest ratio of physicians, nurses, dentists, and pharmacists to population. Conversely, nonmetropolitan areas in California tend to have fewer health workers per person than do metropolitan areas; this is also the case in similar areas in other parts of the United States.

The number of physicians in California as of January 1965 is over 25 per cent greater than it was four years ago. The per cent increase has been substantially higher (33.0 per cent) outside of private practice than it has been in private practice (10.9 per cent). The increase within the private practice sector, in fact, has not quite kept pace with population growth, which has amounted to 12.6 per cent over the four-year period.

Sources: U. S. Public Health Service *Health Manpower Source Book*, Sec. 19, "Location of Manpower in 8 Occupations," Washington, D. C., 1965; AMA Directory Report Service, *Quarterly Tables of Distribution of Physicians*, Chicago, January, 1965.

EARLIER ISSUES of Socio-Economic Report (May 1962, August 1963) have discussed the supply of

physicians in California, their distribution among the 58 counties, and physician characteristics such as type of practice and medical specialty. Information recently published by the Department of Health, Education and Welfare has provided statistics concerning all members of the health occupations, including physicians, dentists, nurses, pharmacists, sanitarians, sanitary engineers, and veterinarians. Although the data are somewhat out of date (1962) they nevertheless represent an effective measure as to the relative position of California among the 50 states in the numbers of personnel available to provide health services. This Report also presents more recent data on numbers of physicians in California.

Table 1 shows health personnel data for the United States, for four geographic regions, and for California. As can be seen, California in particular and the West in general rank considerably above the U.S. average in most ratios of health personnel to population. The difference is particularly great in the relative number of physicians to population. Noteworthy, however, is the fact that California lags behind the Northeastern region of the country in many important ratios, notably those of dentists, nurses, and pharmacists. This situation is the more unusual because it is opposite to the comparison between California and the Northeast in physician/population ratios, wherein California leads by a substantial margin.

Table 2 shows ratios of persons in health occupations to population by standard metropolitan statistical areas within California. The San Francisco-Oakland Metropolitan Area leads in most of the measures, including physicians, nurses, dentists, and pharmacists. Also well above average in physician/population ratios are the San Jose, Los Angeles-Long Beach, and the Santa Barbara Met-

TABLE 1.—Number of Health Personnel per 100,000 Population, by Region: United States, 1962

Item	United States	Region				
		North-east	North Central	South	West ¹	California
Dentists	54.1	70.3	55.5	36.9	59.8	61.2
Nurses, total	449.8	646.8	395.0	302.8	523.9	552.4
active	300.0	412.5	271.9	214.8	338.9	346.6
Pharmacists	66.7	80.9	65.6	54.8	69.4	63.0
Physicians, total	150.8	183.3	132.5	125.0	183.1	211.6
M.D.	142.9	176.3	122.3	121.1	170.0	195.1
D.O.	7.9	7.0	10.2	3.9	13.1	16.5
Sanitarians	5.7	4.3	4.9	6.5	8.0	6.8
Sanitary engineers	3.0	3.0	3.1	2.7	3.3	2.9
Veterinarians	11.6	7.4	15.9	10.0	13.8	11.6

¹Includes California.

NOTE: The regions correspond to those used by the U. S. Bureau of the Census.

TABLE 2.—*Ratios of Persons in Health Occupations to Population, by Standard Metropolitan Statistical Areas: California, 1962*

SMSA	Ratios per 100,000 persons				
	Physicians	Active Nurses	Dentists	Pharmacists	Other ¹
Anaheim-Santa Ana-Garden Grove.....	176.0	333.2	52.3	59.1	18.4
Bakersfield	119.3	243.5	35.9	45.1	18.8
Fresno	138.1	257.5	48.7	57.9	24.6
Los Angeles-Long Beach.....	230.2	326.6	61.8	64.6	15.4
Sacramento	146.3	335.1	51.6	55.7	41.9
San Bernardino-Riverside-Ontario	153.7	313.3	47.0	47.7	19.5
San Diego	189.7	308.3	58.5	44.4	18.5
San Francisco-Oakland	296.2	461.5	80.4	78.5	25.0
San Jose	239.6	419.3	67.5	64.4	22.1
Santa Barbara	225.4	436.6	76.6	72.3	27.0
Stockton	148.4	308.6	48.3	70.3	23.3
Vallejo-Napa	186.0	392.6	51.6	56.9	20.5

¹Includes Sanitary Engineers, Sanitarians, and Veterinarians.

ropolitan Areas. Both San Jose and Santa Barbara show high ratios of active nurses and dentists to population. The ratios of health professionals classified as "other," which includes Sanitary Engineers, Sanitarians, and Veterinarians is relatively consistent in all areas except the Sacramento Metropolitan Area; the unusually high ratio in that area is undoubtedly due to employment of personnel in these occupations by State government.

At the other end of the spectrum in physician/population ratios can be found the Central Valley areas of Bakersfield, Fresno, Stockton, and Sacramento, all of which show ratios of under 150 per 100,000 persons. Bakersfield is also well below average in ratios of nurses, dentists and pharmacists, whereas Fresno is near the average in all other ratios except nurses. The San Diego area ranks lowest in relative numbers of pharmacists.

Recent changes in metropolitan area designations should be noted. The Anaheim-Santa Ana-Garden Grove Area (Orange County) and the Vallejo-Napa Area (Solano and Napa Counties) are shown separately for the first time in this Report. Previously, the former was part of the Los Angeles-Long Beach Metropolitan Area and Solano County was included in the San Francisco-

Oakland Area. Napa County was formerly considered nonmetropolitan. Lastly, the Sacramento Metropolitan Area now includes Yolo and Placer Counties, neither of which was previously contained within any metropolitan area.

Table 3 compares ratios of persons in health occupations to population for California and the United States by type of geographic area.

The relationships among the county groups in ratios of physicians and of active nurses to population closely parallel those for the rest of the country; although higher in California than elsewhere regardless of type of area (with only one minor exception), the differences are most notable in areas termed "adjacent" and "isolated rural." In the latter category, the ratio both of physicians and of nurses is almost double that in comparable areas throughout the rest of the United States. With the exception of the health personnel classified as "other," physicians constitute the only group which shows a higher ratio to population in California than in the total United States, regardless of county group.

In all but greater metropolitan areas, dentists are relatively more numerous in California than in the remainder of the country. The higher ratios are particularly noteworthy in adjacent and in iso-

TABLE 3.—*Ratio of Persons in Health Occupations to Population, by County Group: U. S. and California, 1962*

County Group	Ratios Per 100,000 Persons									
	Physicians		Active Nurses		Dentists		Pharmacists		Other	
	U.S.	Calif.	U.S.	Calif.	U.S.	Calif.	U.S.	Calif.	U.S.	Calif.
Greater Metropolitan	205.0	243.5	327.5	360.8	71.0	66.4	81.2	66.1	16.2	18.4
Lesser Metropolitan	153.0	171.1	339.6	336.6	52.0	53.0	65.2	57.2	21.0	24.1
Adjacent to Metropolitan....	91.5	148.7	254.2	304.5	38.7	53.0	51.3	60.6	24.6	30.8
Isolated Semi-Rural	100.4	110.1	242.8	274.1	40.6	51.6	56.0	58.4	24.3	26.5
Isolated Rural	59.1	112.2	125.9	248.8	27.4	29.3	45.3	53.7	19.8	29.3

lated semi-rural counties. Pharmacists, who comprise the only major group relatively less numerous in the total State than in the nation, are, however, more abundant in all nonmetropolitan areas in California than in other states. The difference noted in greater metropolitan areas, which is of substantial proportions, is probably attributable at least in part to the distribution system in the drug field, wherein the pharmacist may in more recently developed areas of the country devote relatively more time to functioning as a pharmacist and less as a general drug clerk. The more recent rapid growth in major metropolitan areas within California explains this more efficient, specialized system of prescription drug dispensing.

The last measurement shown in Table 3 is that

of Sanitary Engineers, Sanitarians and Veterinarians to population. One can readily see that these occupations, classified together for convenience in presentation, are relatively more prevalent in California than in the rest of the United States in all types of county group.

Table 4 contains more recent (January 1965) information concerning California physicians, by selected types of practice within geographic areas. Note that these figures exclude physicians in the employ of the Federal Government.

The total number of physicians in private practice at that time was 22,674, of whom 7,707 were in General Practice (with or without part-time specialties) and 14,967 were in full-time specialties. Another 6,478 physicians were listed outside

TABLE 4.—All Non-Federal Practicing Physicians¹ in California, Selected Practice Data by County Medical Society Jurisdiction, January 1965

County Medical Society Jurisdiction	Private Practice			Not in Private Practice		
	Total	G.P. ²	Specialist	Total	Hospital Service	All Other
CALIFORNIA TOTAL	22,674	7,707	14,967	6,478	4,399	2,079
Alameda-Contra Costa	1,856	596	1,260	457	265	192
Butte-Glenn	121	64	57	14	8	6
Fresno-Madera ³	391	159	232	87	68	19
Humboldt-Del Norte	97	54	43	5	1	4
Imperial	49	23	26	8	6	2
Inyo-Mono	13	8	5	1	0	1
Kern	260	110	150	62	49	13
Kings	42	33	9	6	5	1
Lassen-Plumas-Modoc-Sierra	29	25	4	2	1	1
Los Angeles	9,307	3,141	6,166	2,666	1,805	861
Marin	304	68	236	52	34	18
Mendocino-Lake	65	41	24	21	18	3
Merced-Mariposa	64	37	27	6	4	2
Monterey	230	79	151	20	11	9
Napa	90	33	57	87	74	13
Orange	1,175	444	731	158	117	41
Placer-Nevada	86	51	35	27	23	4
Riverside	376	157	219	55	31	24
Sacramento-Amador-El Dorado	665	255	410	99	56	43
San Benito	9	7	2	2	0	2
San Bernardino	564	221	343	170	113	57
San Diego	1,275	475	800	189	110	79
San Francisco	1,774	350	1,424	1,151	822	329
San Joaquin-Alpine-Calaveras-Tuolumne	283	133	150	90	74	16
San Luis Obispo	96	40	56	35	25	10
San Mateo	646	124	522	95	57	38
Santa Barbara	327	83	244	48	30	18
Santa Clara	1,179	272	907	616	402	214
Santa Cruz	147	66	81	11	9	2
Shasta-Trinity	82	42	40	7	5	2
Siskiyou	24	17	7	1	1	0
Solano	112	43	69	22	12	10
Sonoma	219	105	114	42	31	11
Stanislaus	184	75	109	26	18	8
Tehama	23	19	4	1	1	0
Tulare	136	80	56	35	27	8
Ventura	236	113	123	87	76	11
Yolo	62	30	32	10	6	4
Yuba-Sutter-Colusa	76	34	42	7	4	3

¹Excludes MD's who are retired or not in practice.

²Includes part-time specialists.

³Physicians in Madera County included with Fresno County, since a majority of those who belong to a county medical society are affiliated with the Fresno County Society.

of private practice; the majority of these (4,399) were in full-time hospital service, including internship, residency and other full-time hospital staff positions. The 2,079 physicians in the "all other" category included full-time medical school teachers, medical administrators, and physicians in laboratory medicine, preventive medicine and research. Physicians who are completely retired or otherwise not engaged in the practice of medicine are excluded from Table 4, statewide, they total 2,244 physicians.

Data for geographic areas are presented on the basis of County Medical Society jurisdictions, although the figures represent non-members as well as members. Among the 58 California counties, there are 40 medical society jurisdictions, ranging in numbers of physicians from 11 (San Benito County) to 11,973 (Los Angeles County).

In the private practice sector, the ratio of specialists is generally correlative to the degree of urbanization within an area. Among the highest ratios of specialists to all private practitioners are those in San Mateo County (522:646), San Francisco County (1,424:1,774) and Marin County (236:304). Urban areas in Southern California tend to be somewhat lower in relative numbers of specialists, in part due to the fact that former Doctors of Osteopathy who are more prevalent in the Los Angeles area are usually in General Practice. Physicians in General Practice comprise a clear majority in rural areas such as the Lassen-Plumas-Modoc-Sierra County region (25:29), Kings (33:42), Mendocino-Lake (41:65), San Benito

(7:9), Siskiyou (17:24), and Tehama County (19:23).

The ratio of physicians outside of private practice among the various areas is also of interest. Statewide, 6,478 out of 29,152 physicians are not in private practice; this amounts to slightly over one physician in five, or 22.2 per cent. Ratios vary substantially in different areas; they are highest in relatively low-population-density areas which contain a large State medical facility, such as Napa County, and in metropolitan counties where teaching hospitals are relatively prevalent, such as San Francisco. The presence of a medical school also has bearing on this situation, although not as noticeably as the other factors. Santa Clara County combines a medical school (Stanford) with a State Institution (Agnew State Hospital) and shows a ratio of physicians outside of private practice which is well above average.

In early 1961, there were a total of 18,444 M.D.'s in private practice, plus approximately 2,000 Doctors of Osteopathy in California, making a total of 20,444 physicians. This, compared with the 22,674—1965 figure, amounts to a net four-year increase of 10.9 per cent. Among physicians outside of private practice, the increase has been from 4,871 to 6,478, or 33.0 per cent. This does not account for former Osteopaths who in 1961 were engaged in a type of practice other than private practice; however, this number is assumed to have been negligible. The overall increase in practicing physicians is 15.2 per cent. During this same period, California's population has increased approximately 12.6 per cent.

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